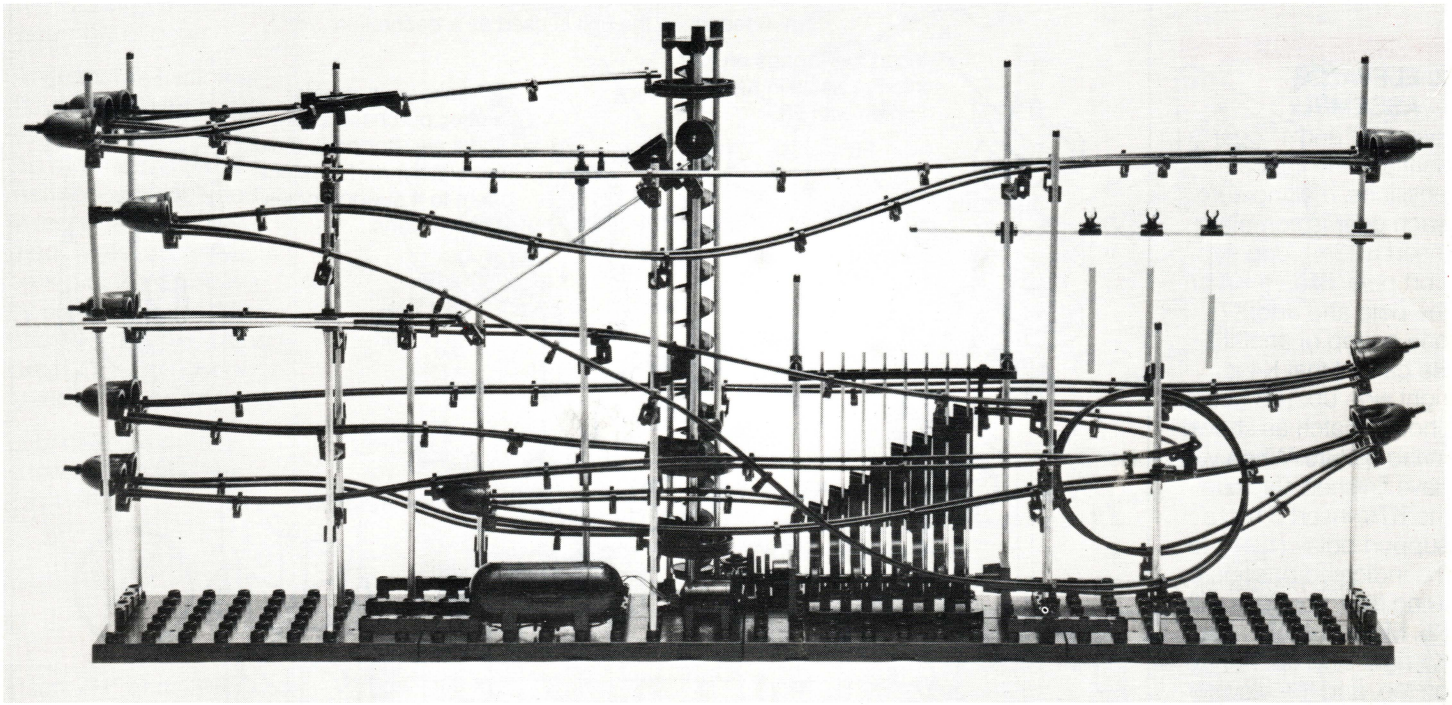
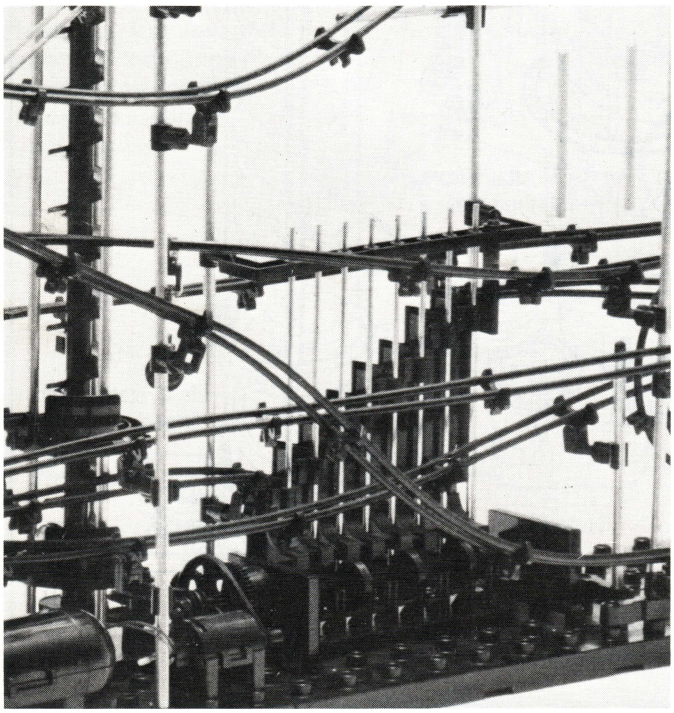
INSTRUCTION BOOKLET

SPACEWARP™

Be daring—create this impressive roller coaster. It's fascinating. Have fun—play with it!

BLACK WOLF™ COASTER





PRIOR TO ASSEMBLY

- Read the instructions carefully before assembling.
- The parts are shown on page 15. Check that all the parts are included before assembling.
- Trim any extra plastic off components.
- The tools you might need for assembly are pliers, a Phillips screwdriver, needle nose pliers and mat knife.
- Cut out the parts list on the back cover and refer to it when assembling.

CONTENTS

How to assemble 1-15 . P2—P9
Picture of assembled Spacewarp P10, P13
Basic layout plans P11-P12
Checklist for correcting troubles P14
Parts List P15

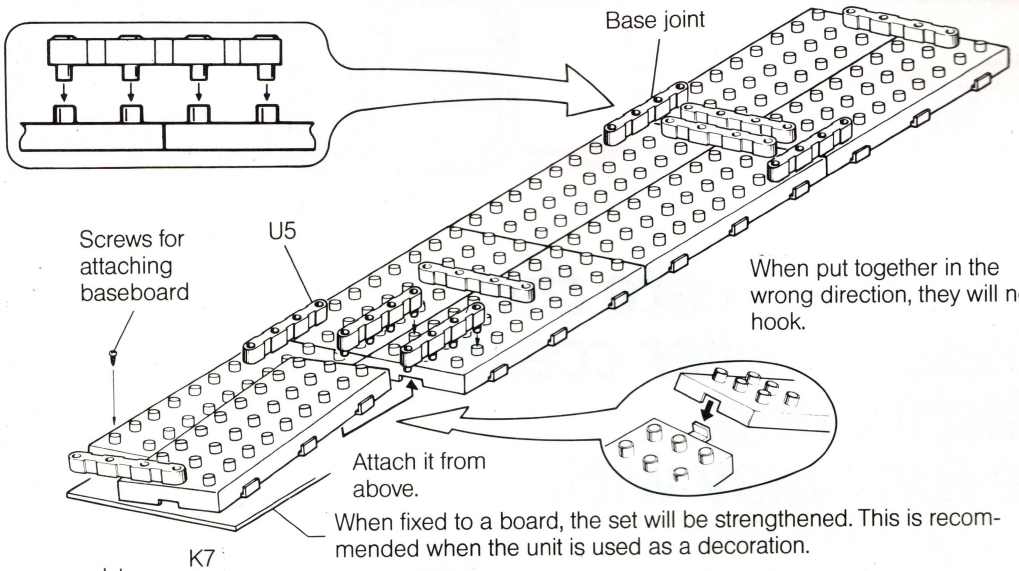
For children under 12 years old, parental assistance in assembly of item may be required.

BANDAI®

HOW TO ASSEMBLE SPACEWARP

1. BASE ASSEMBLY

First, decide on a basic layout, depending upon what kind of course you would like to create (a basic layout is shown). Next, connect the base units using the connecting hooks. Make sure they are aligned properly; they will not connect if put together in the wrong direction. Next, attach base joints to the base, as shown in the picture.

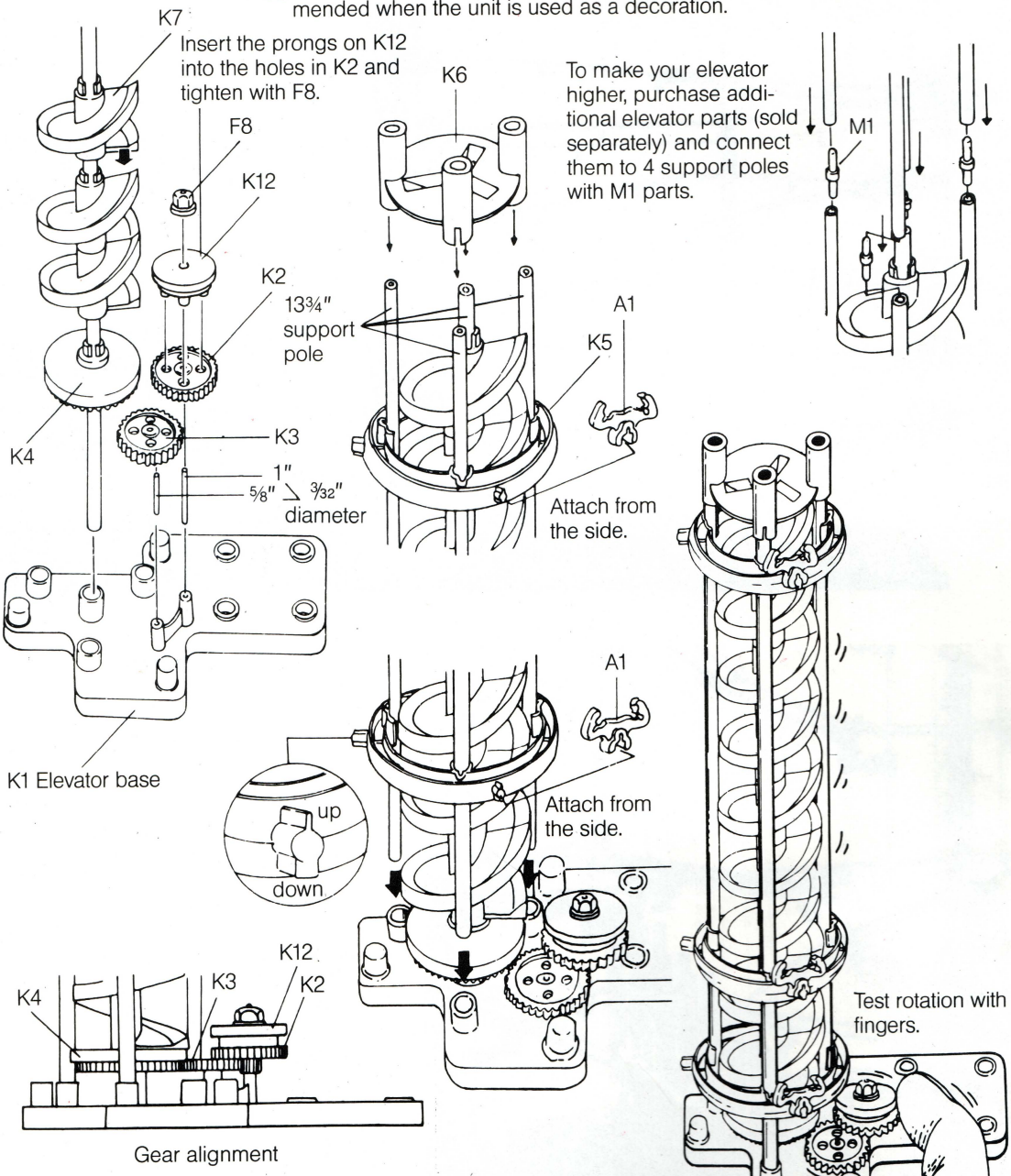

Base joint
Screws for attaching baseboard
U5
When put together in the wrong direction, they will not hook.
Attach it from above.
When fixed to a board, the set will be strengthened. This is recommended when the unit is used as a decoration.

2. ELEVATOR ASSEMBLY

Insert 5/8" and 1" gear shafts in the indicated positions, making sure each gear is complete. Insert a 13¾" long support pole. Slide a K4 on the pole and add K7s one on top of another. Be careful that K4 is right side up. The gears should match as shown in the picture. When you have finished stacking the K7s, insert 3 more support poles (13¾") to the indicated positions, fixing their positions with K5. Make sure you have K5 right side up. Put K6 on top, and the elevator is complete.

K5 will be the entrance or exit for your ball. Make sure it aligns with the rails by jiggling it up and down a little, if necessary. Fix A1 to the entrance.

When you are finished, test to see that the gears turn smoothly by moving them with your fingers. If you hear a strange sound or if it's too tight to rotate, first check to see that the elevator is not warped, then adjust the connection of the gears.



If the elevator doesn't move smoothly, we suggest you apply a small amount of lubricant or grease on the *gears*, *pulleys* and *center pole* of the elevator. This may be helpful. However, there should not be any oil on the rubber bands.

3. HOW TO ASSEMBLE THE STAIRCASE

See Drawing 1 to assemble the staircase parts. Assemble Part M10 through M17 in the same way.

Drawing 2 shows the assembly of the camshaft. Assemble M5 as shown in the drawing, and insert a 7⅛" wire rail.

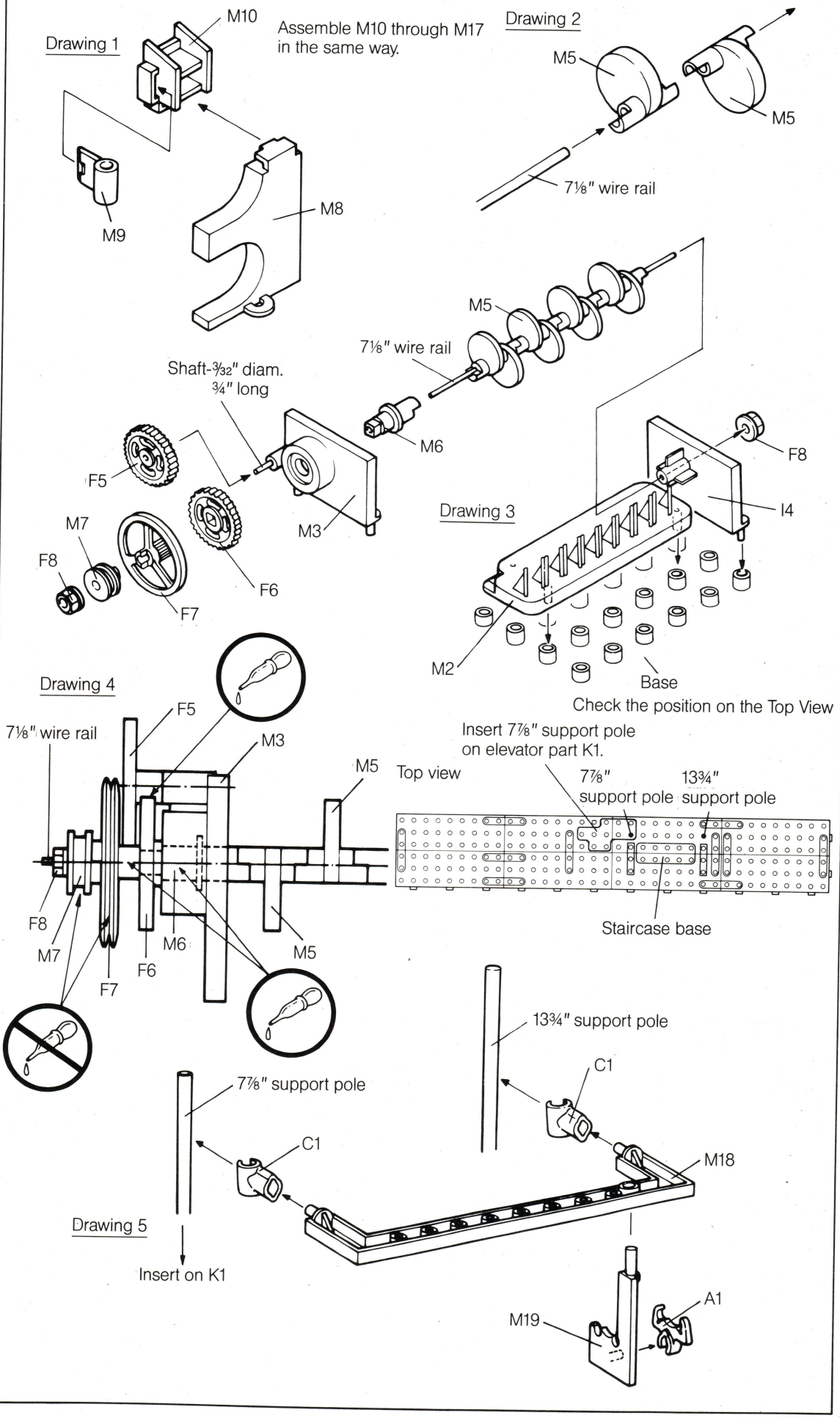
Attach the staircase base onto the base, as shown in Drawing 3.

See Drawing 4 for assembly of gears.

Since there's friction at the staircase, it's necessary to lubricate a little the moving parts using the lubricant (included) to facilitate the movement. Make a small hole on top of the lubricator by using a pin, and lubricate where indicated. CAUTION: Do not put lubricant on rubber belt.

Lubricate the part(s) shown when you see this symbol.

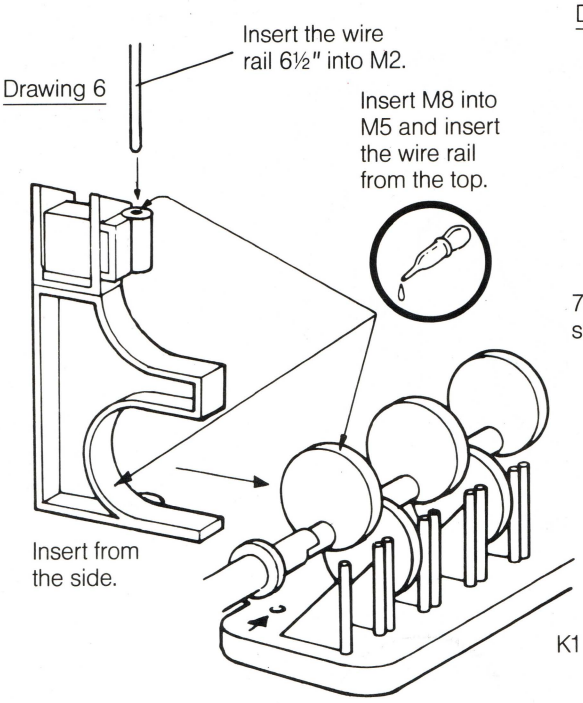
Insert 7⅞" and 13¾" support poles where indicated on Top View, and assemble the parts on top of the staircase as shown in Drawing 5.



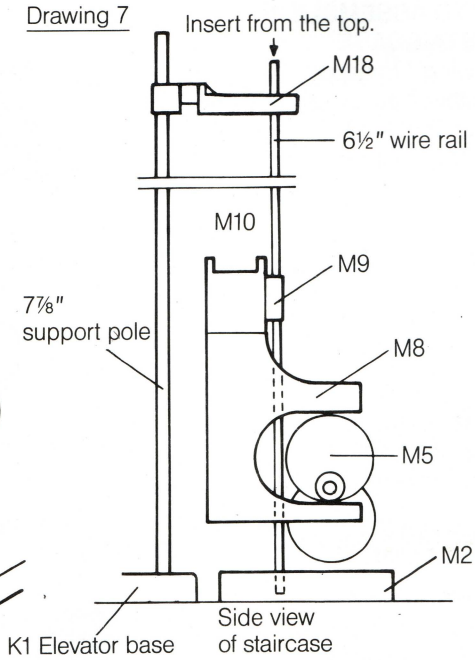
Connect all the parts assembled in Drawing 1 to the camshaft, as shown in Drawing 6.

Insert M8 into M5. Insert the 6½" wire rail, from the top, into the M2 staircase. Fasten the top of the wire rail using M18 (see Drawing 7).

Drawing 6



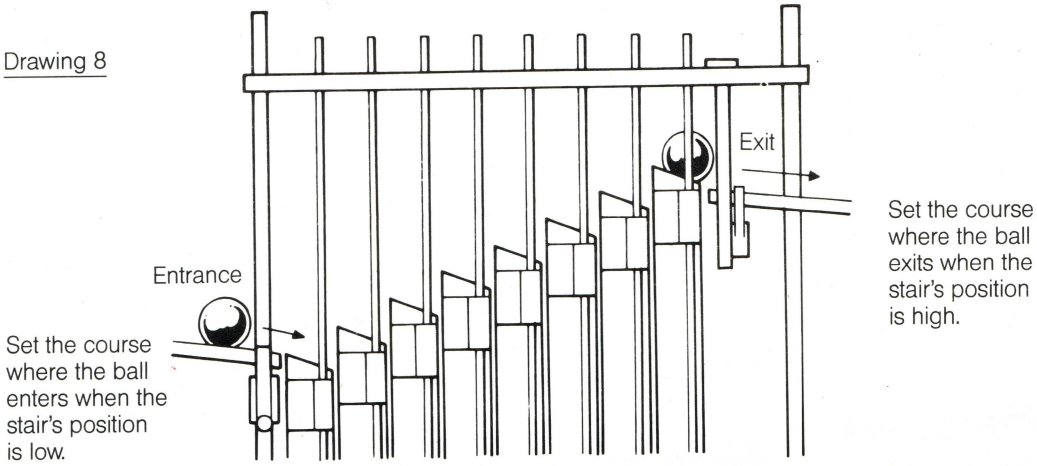
Drawing 7



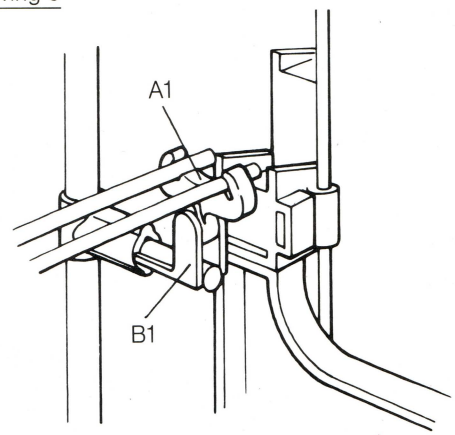
See Drawing 8 to determine the entrance and exit of the course.

See Drawings 9 and 10 to assemble the entrance and the exit.

Drawing 8

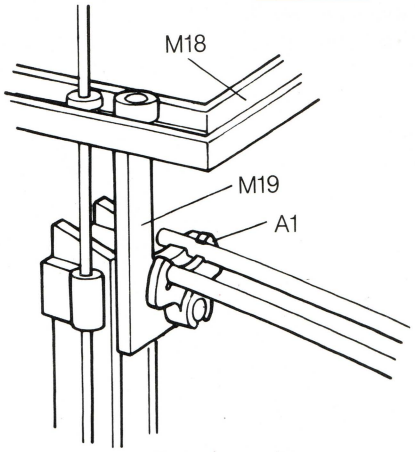

Exit
Entrance
Set the course where the ball exits when the stair's position is high.
Set the course where the ball enters when the stair's position is low.

Drawing 9



Staircase entrance

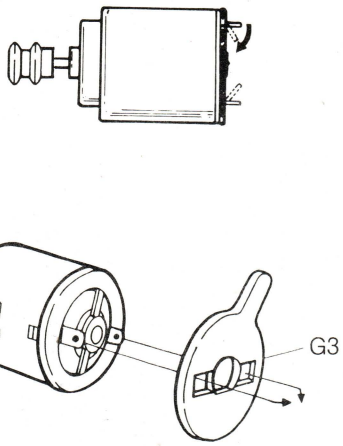
Drawing 10

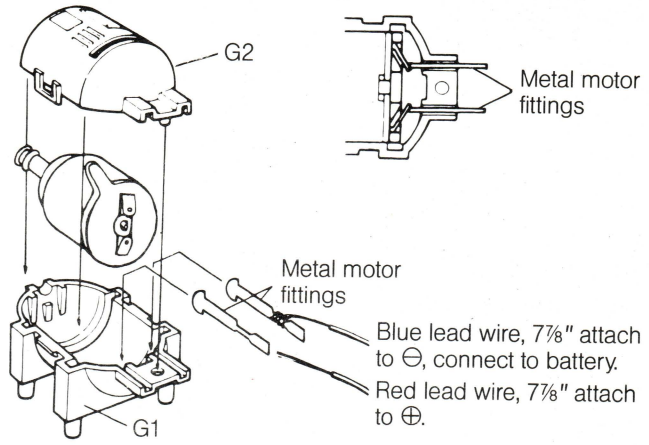


Staircase exit

4. MOTOR ASSEMBLY

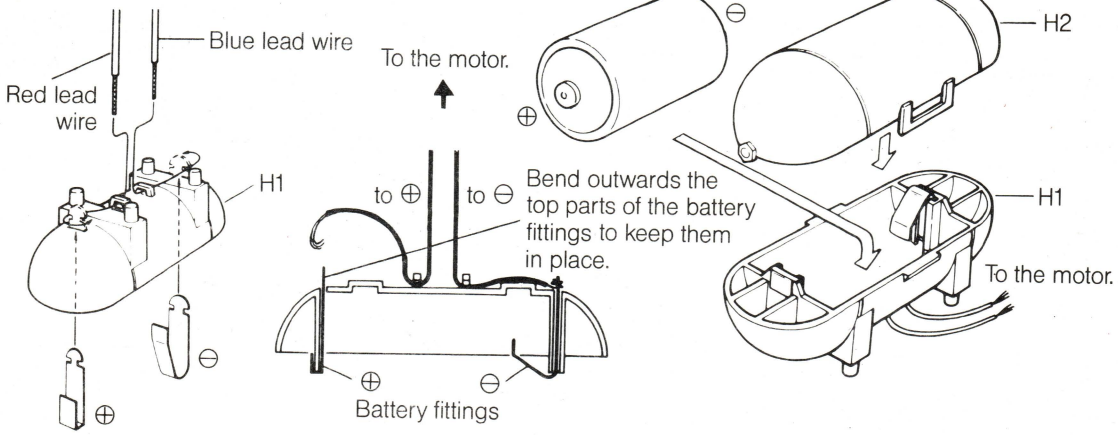
Connect G3 to the motor as shown, and bend the prongs of the motor slightly inward. Make sure you match the shape of the tip on the back of the motor with the hole of G3. If not matched properly, they will not work well. Place the motor with wires and connectors attached on G1. Cover them with G2. The lead wire should be fastened to the metal fittings tightly.





5. POWER UNIT ASSEMBLY

Attach metal battery fittings ⊕ ⊖ and the lead wires to H1. Insert one (1) 'D' battery (sold separately) and cover it with H2. Avoid mixing up ⊕ ⊖.



PLEASE NOTE: To expose the electric wire in the lead line, trim the vinyl cover by carefully cutting it with a knife, and pull it gently.

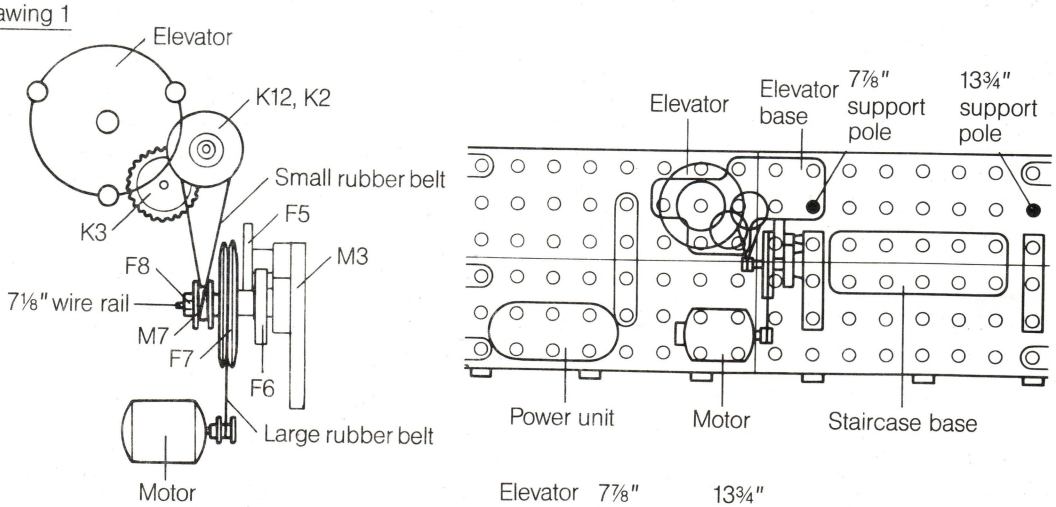
6. ATTACHING THE ASSEMBLED PARTS TO THE BASE

The elevator and staircase are moved by one motor.

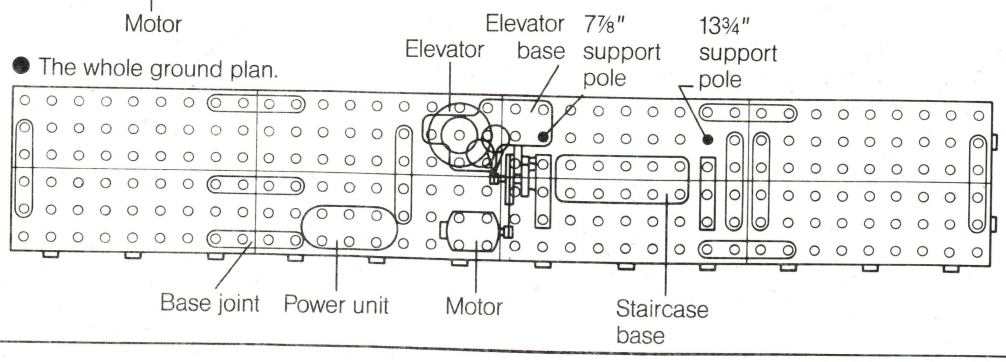
Position the parts as shown in Drawing 1, and connect with the rubber belt. Be careful not to put any oil on the rubber belt.

Each part should be placed on the base, as shown on the whole ground plan.

Drawing 1



● The whole ground plan.

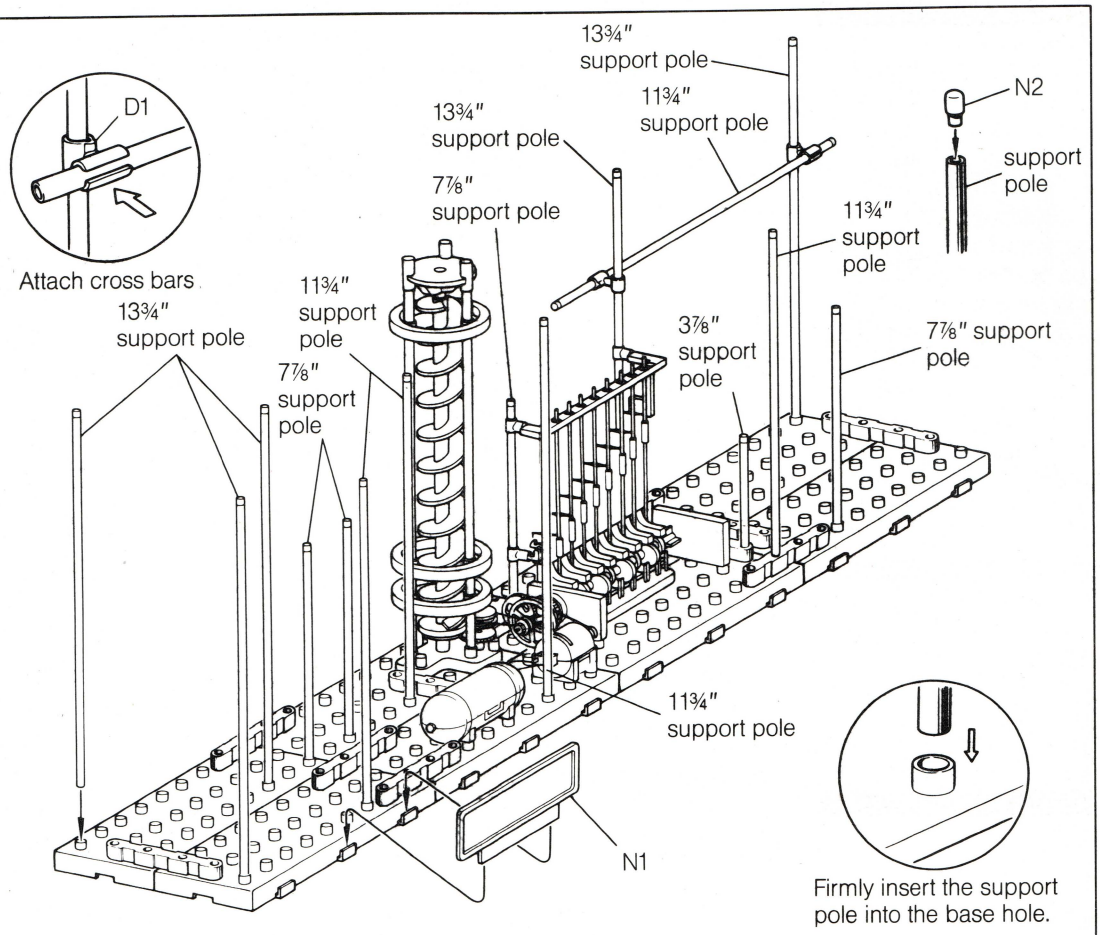


7. HOW TO ATTACH SUPPORT POLES

Insert the support poles to the base or base joint holes as in the picture.

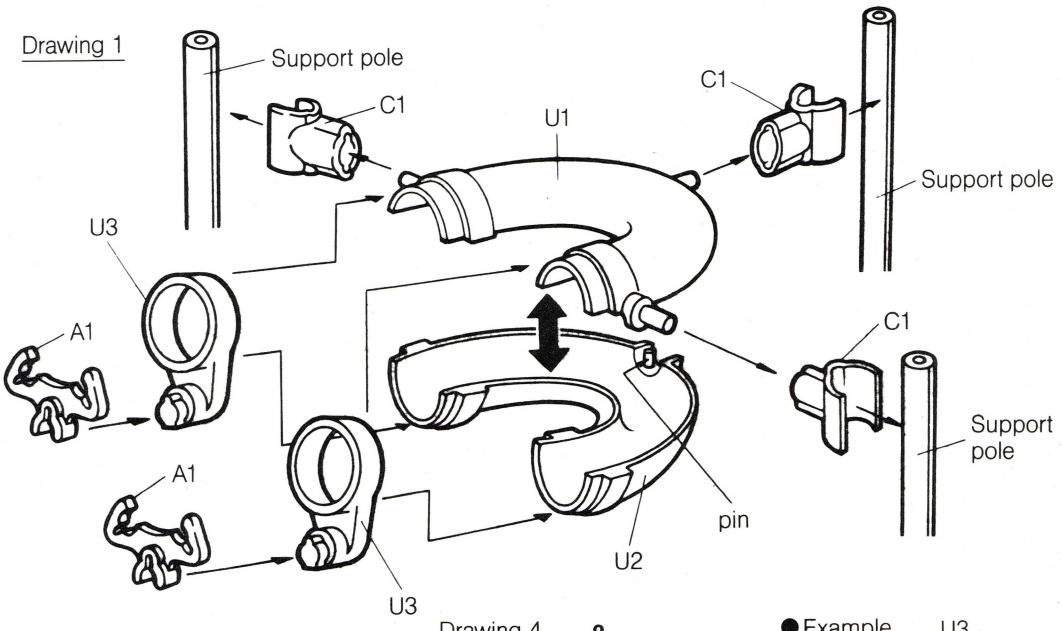
Attach horizontal cross bars as shown.

Insert support pole cup N2 on top of the support pole. Insert Name Plate N1 where shown in drawing.

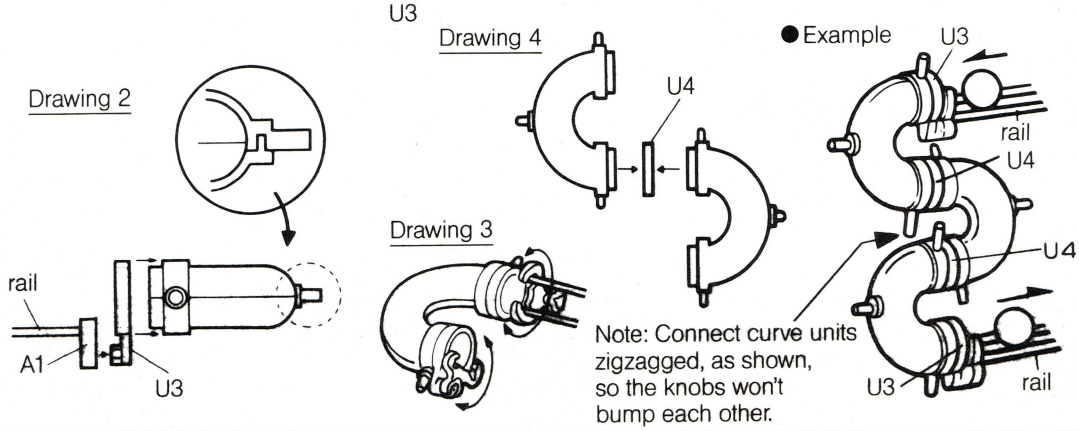


8. HOW TO ASSEMBLE CURVE UNITS

Assemble the whole unit as follows.
First, fit U1 and U2 together and fix them with U3.
Attach A1 to U3 for fitting the rails later. U3 can be turned to change the course. (See Drawing 3.)
Attach it to the poles using C1. Position C1 depending upon your choice of course.

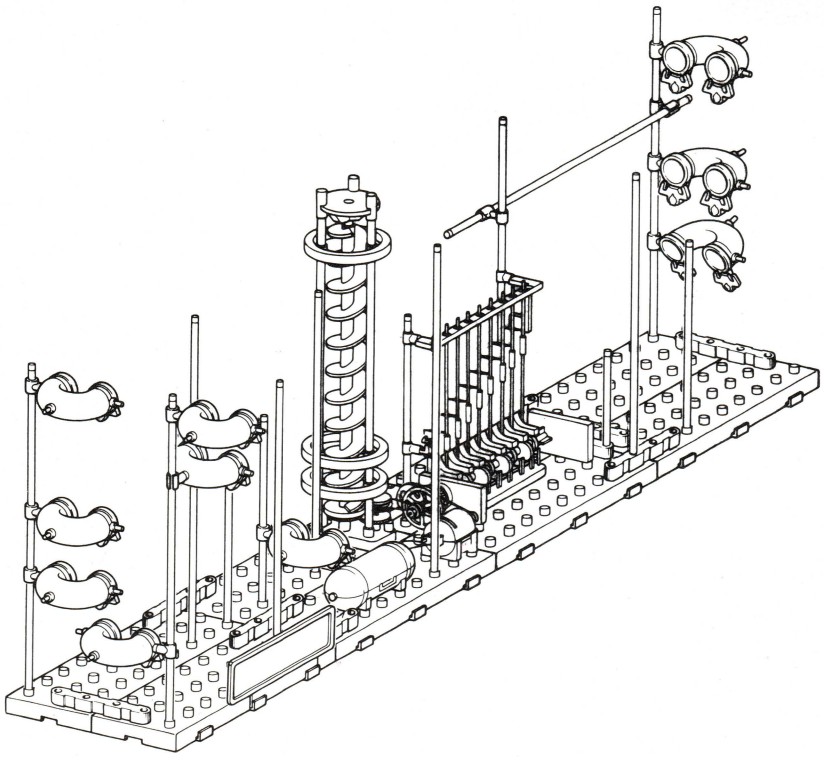


• Connecting curve units together—
You can create interesting and original courses by connecting the curve units together. Use U4 instead of U3 for these connections. (See Drawing 4.)



9. HOW TO ATTACH CURVE UNITS

Attach the assembled curve units approximately as indicated. Final adjustment can be made later when you attach rails or when you do layouts. Here, you are only temporarily assembling them.



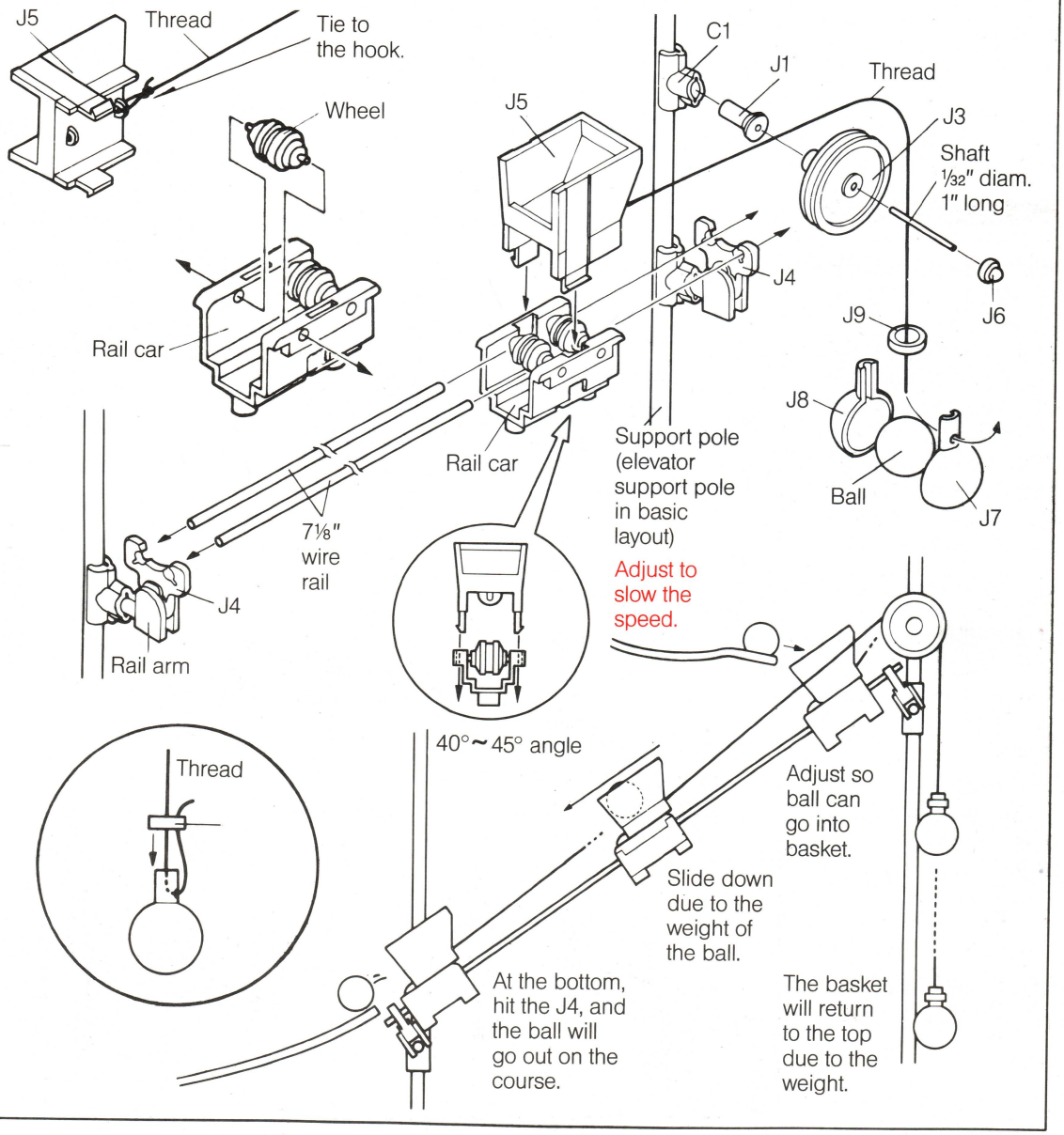
10. HOW TO ASSEMBLE ESCALATOR

When a ball gets in a basket, it will go down due to the weight of the ball. Assemble as shown in the drawing.

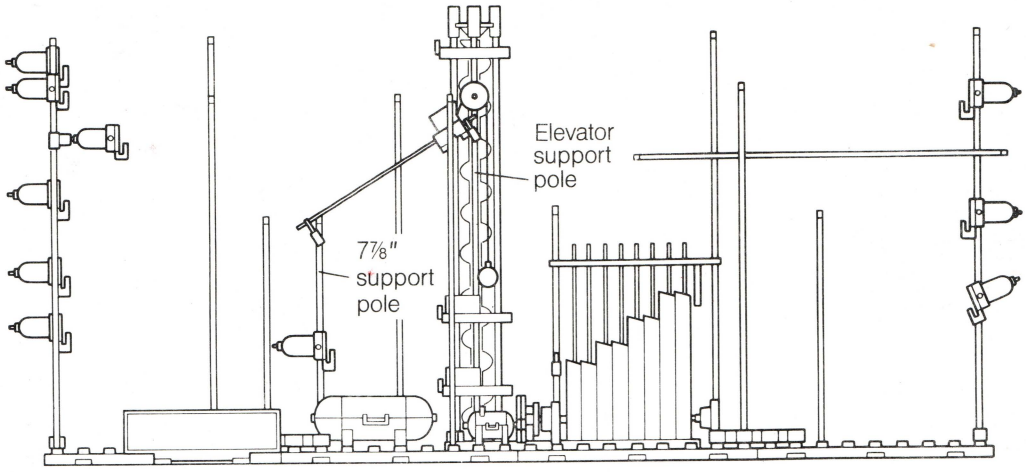
Refer to the illustration on how to attach the elevator to the support pole.

NOTE: If the basket doesn't slide down, adjust the angle of the wire rails by moving rail arm (J4).

Adjust the angle of the rail at the bottom so that the balls can exit smoothly.

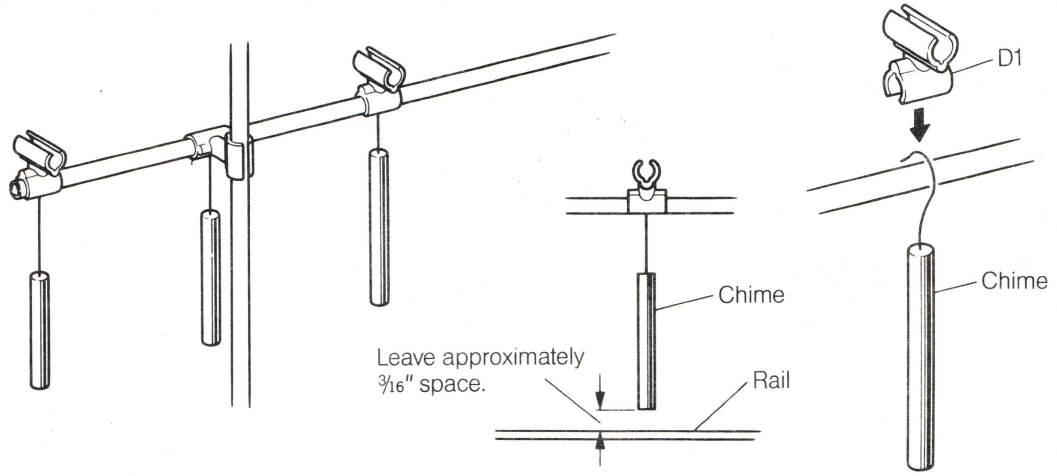


11. HOW TO ASSEMBLE ESCALATOR



12. HOW TO ATTACH THE CHIMES

Attach chimes to the support pole using C1 or D1. Align the chimes so that their height is the same on the rail.



13. HOW TO ATTACH RAILS

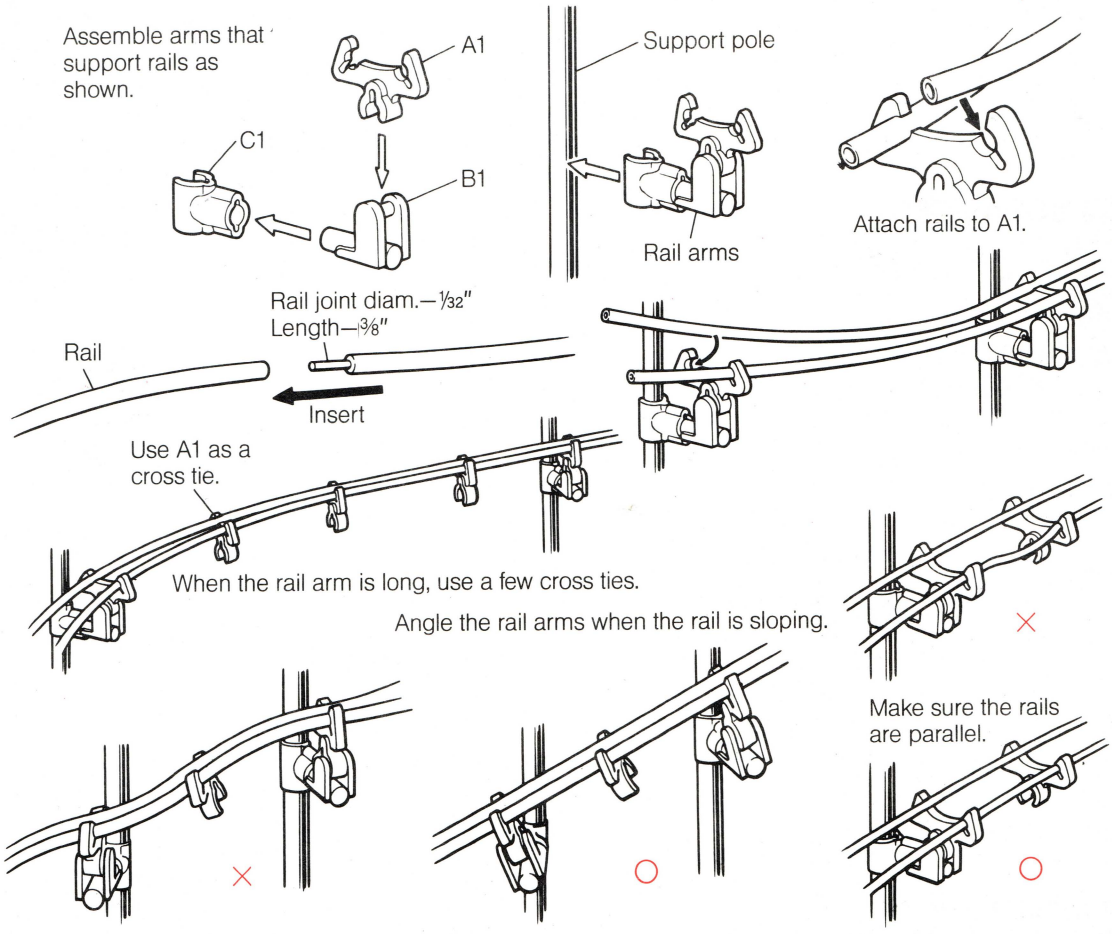
Attach rails from below. There is a choice between two courses in the basic layout.

- Attach rails arms on each part, referring to the completed picture of the basic layout.

To connect rails, use rail joints (⅜" shafts). Insert them into the holes in the center of the rails. Trim the end of rails neatly so the joint is smooth.

When the parts are all assembled, test with a ball and adjust accordingly.

O=CORRECT WAY
X=INCORRECT WAY

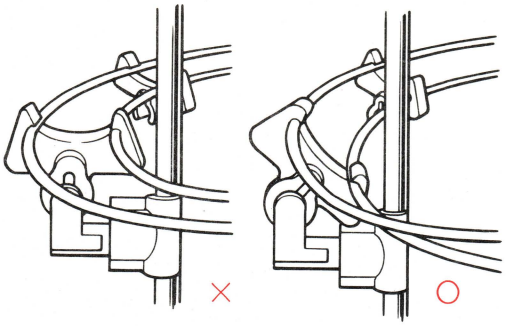


How to assemble switches.

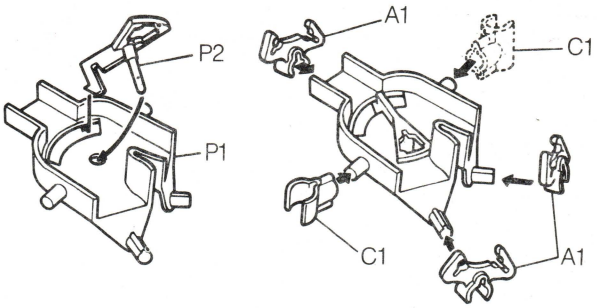
Insert P2, making sure the claw fits into the slot. Be careful not to break the claw. Attach part A1 to the entrances and exits as shown. Then, use C1 to attach the switch to the support pole.

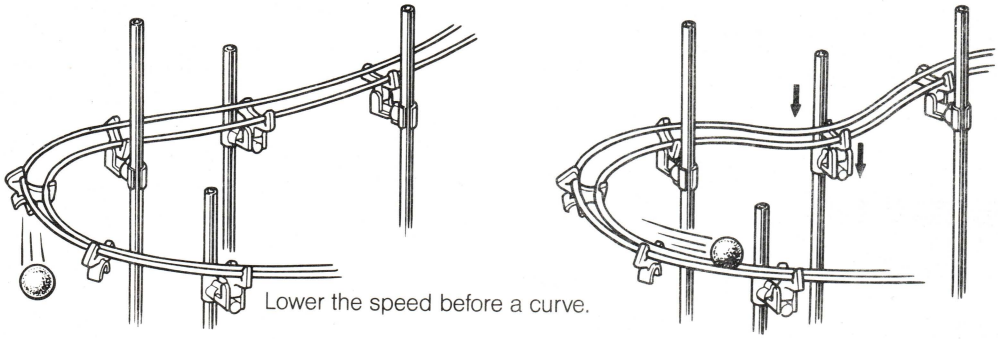
If the ball derails, bank the curve. If derailing still occurs, the speed of the ball is too high. Slow the ball down before it enters a curve as shown in the drawing.

Make sure the curves are banked.



How to assemble switches.





Lower the speed before a curve.

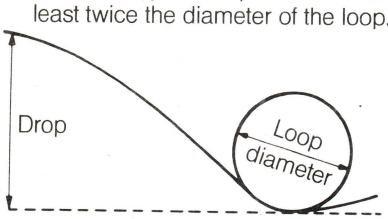
14. HOW TO MAKE A LOOP

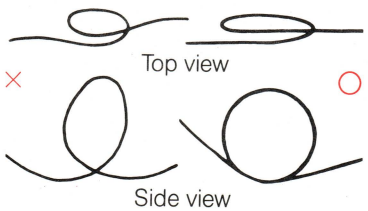
To make a loop work well takes careful adjustments. Experiment running a ball to make sure it has enough speed to go around the loop.

Make sure each part is set properly. For example, check to see that rail arms, cross ties (A1), support poles and rails are set properly. Check that rails are not off the cross ties, and check to see that rail arms are not off the support poles.

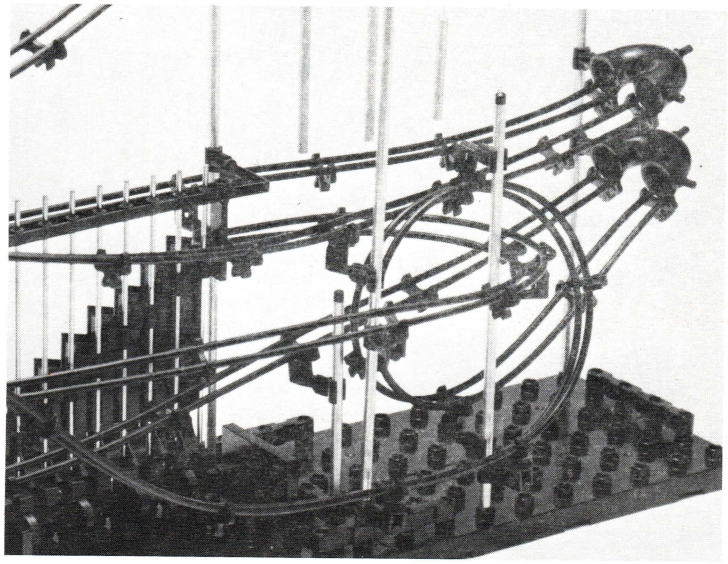
● Make sure the rails are not distorted. In particular, the loop has to be in a perfect circle for smooth riding.

Ex) Basically the drop should be at least twice the diameter of the loop.





● Basic layout of loop



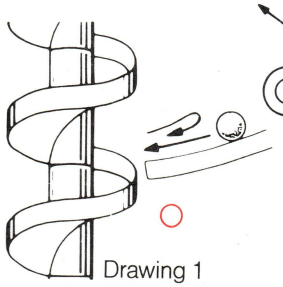
15. ELEVATOR ENTRANCES AND EXITS

Elevator entrances and exits should be both on the same side. This reassures continuous driving.

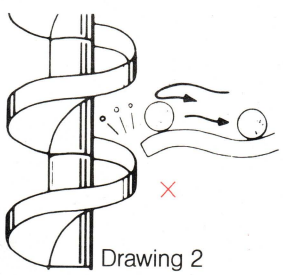
The elevator entrance should be located on an upper level, allowing the ball to roll easily down a long path as shown in Drawing 1.

If the ball is moving too fast, it may bounce or fall off. Drawing 2 shows a case where the ball bounces back, loses its speed, and stops on the rail.

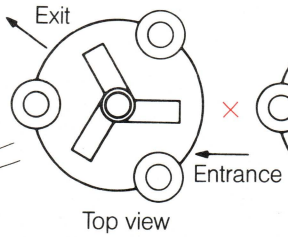
O=CORRECT WAY
X=INCORRECT WAY



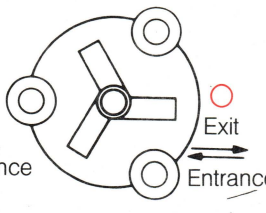
Drawing 1

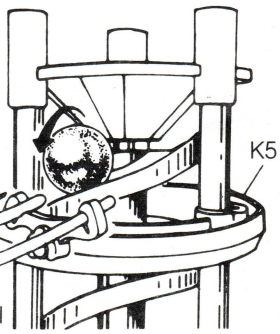


Drawing 2



Top view



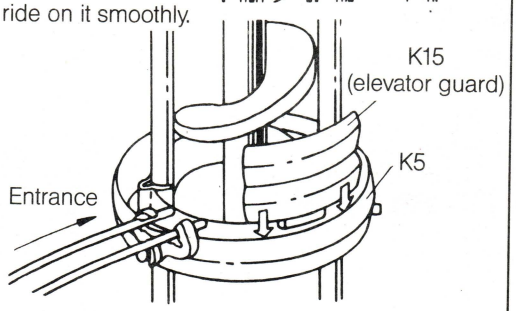


Adjust K5 up and down. Adjust the rail so the ball will ride on it smoothly.

Attach elevator guard as shown.

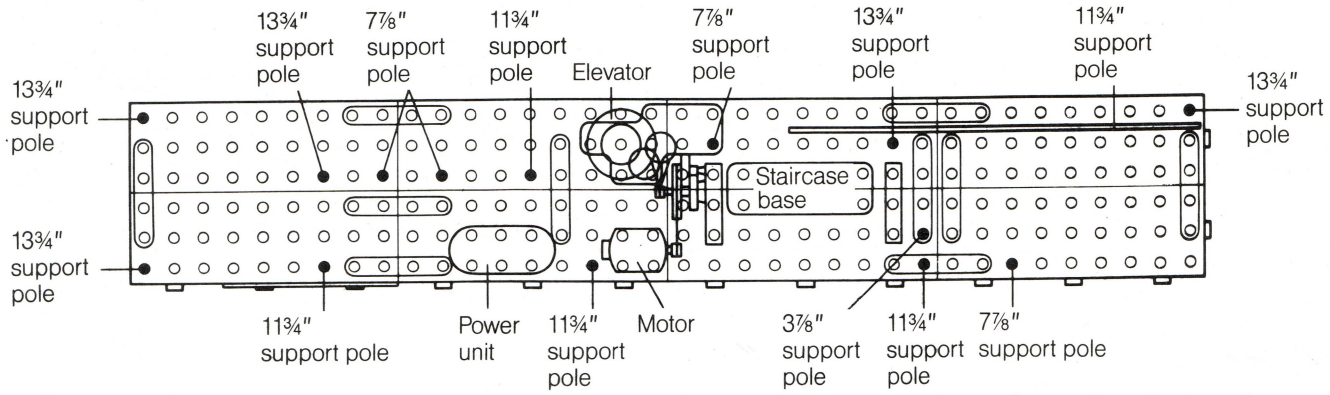
Insert an elevator guard next to the entrance of the ball.

If the ball does not enter the elevator easily, pull back the ends of the rails to let the ball drop into the elevator entrance.



SPACEWARP allows you to create your own course layout. But it will help to first master the basics of course creation with the basic layout here. Then you can expand your enjoyment of SPACEWARP with partial changes of the basic layout to totally creating your own layouts.

POSITIONS OF SUPPORT POLES AND POWER UNITS

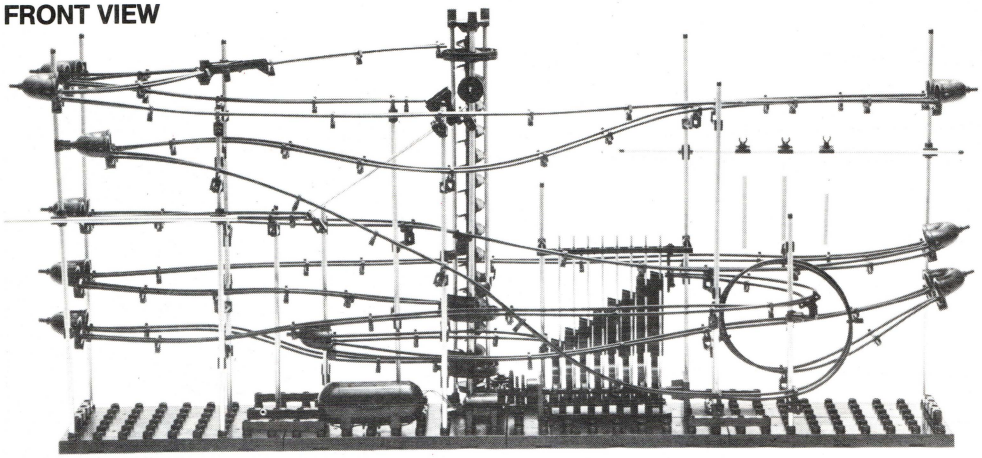


Stand each support pole where indicated with ●. Attach cross bars referring to the package and page 6.

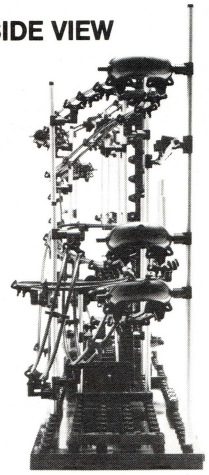
● Attach the elevator, power unit, base joint motors, staircase and pulleys to the positions shown.

There are two courses in the basic layout. (There is one elevator exit, but two entrances due to the use of switches. Please check the pictures carefully.) NOTE: Do not cut the extra rails until the final adjustments of the layout are done.

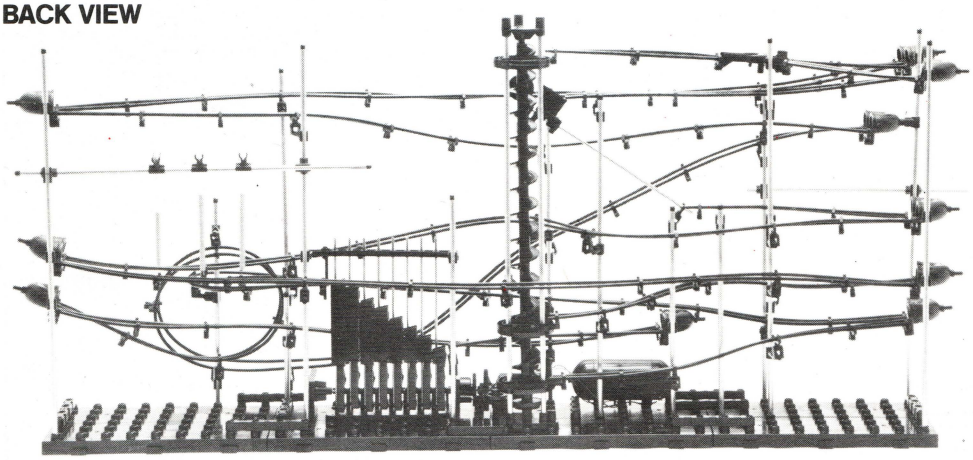
FRONT VIEW



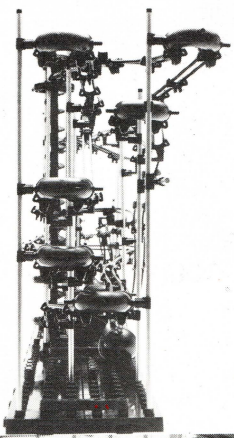
RIGHT SIDE VIEW



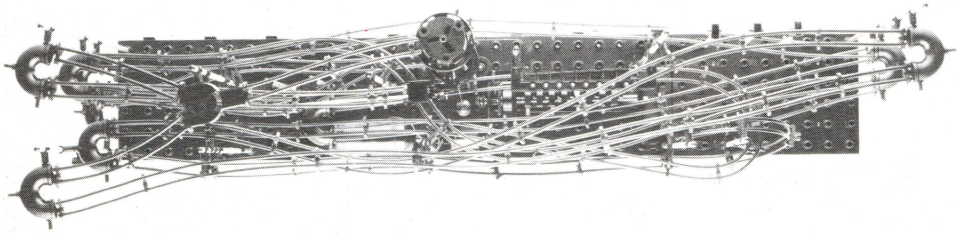
BACK VIEW



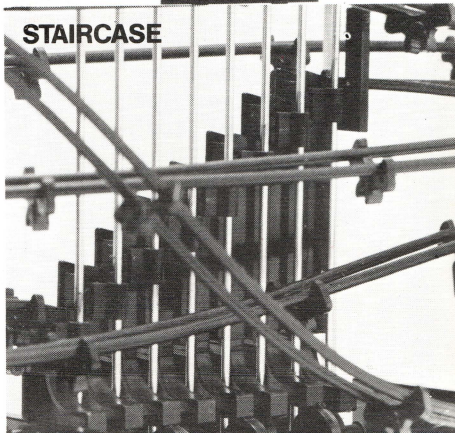
LEFT SIDE VIEW



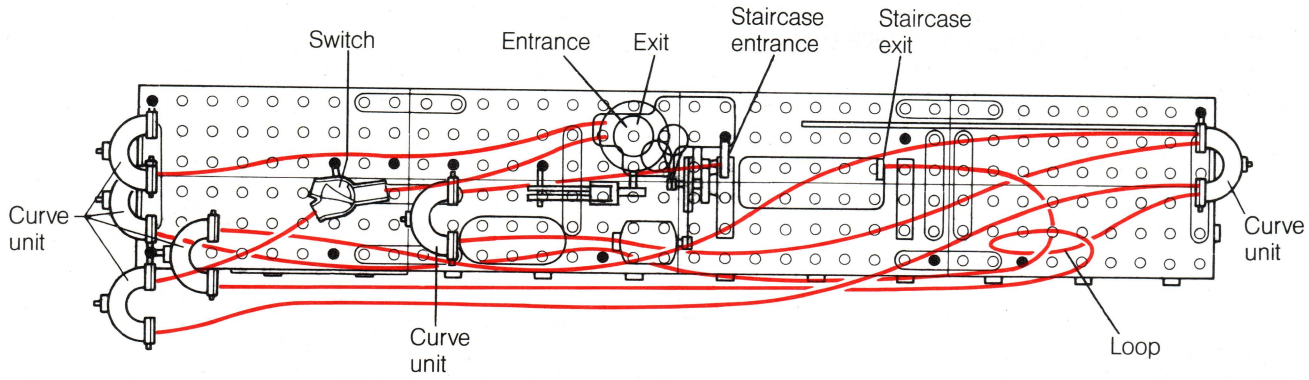
TOP VIEW



STAIRCASE



COURSE LAYOUT ①

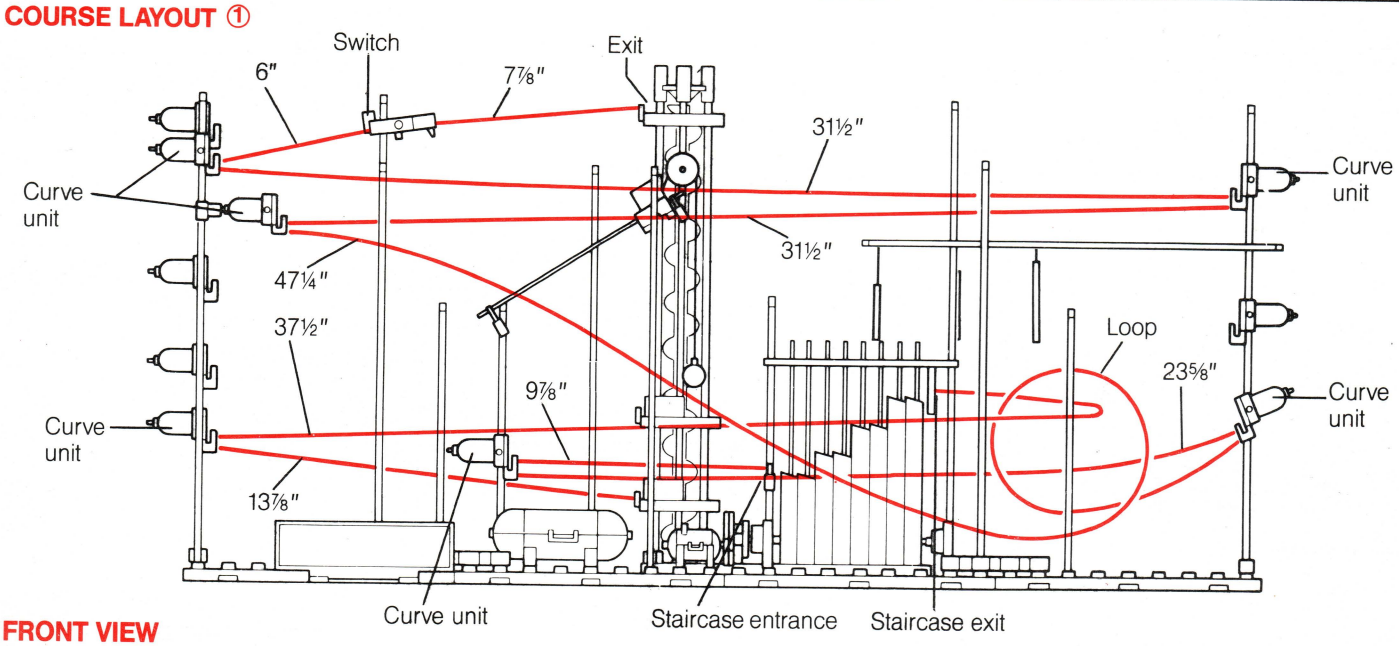


TOP VIEW

Assemble rails from the bottom.

The distance from the exit to the switch is 7⅞"; from the switch to the curve unit it's 6"; from one curve unit to another it's 31½" (2 layers); from curve unit to curve unit (using a loop) it's 47¼"; and from curve unit to curve unit it's 23⅝"; from curve unit to staircase entrance it's 9⅞"; from staircase exit to curve unit it's 37½"; from curve unit to the entrance it's 13⅞. Cut two rails for each track allowing a little extra according to the specific length. Attach them as indicated in the drawing, and adjust the length, if necessary, after assembling.

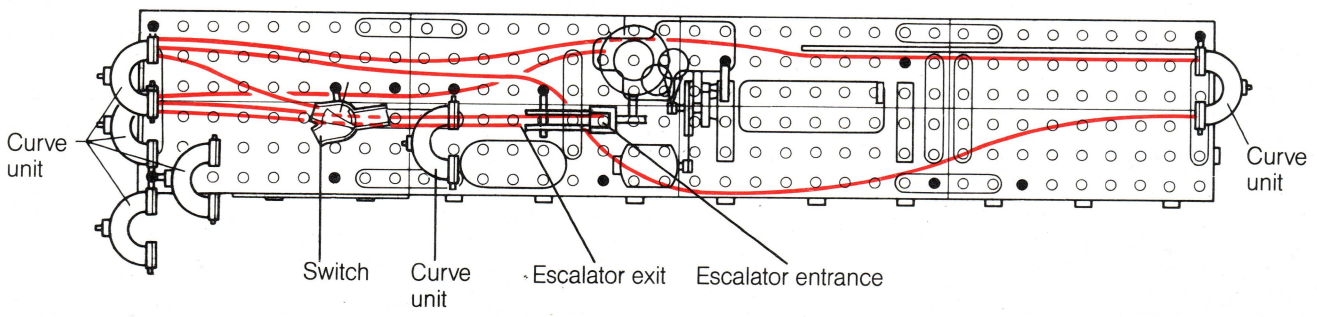
COURSE LAYOUT ①



FRONT VIEW

The distance from the exit to the switch is 7⅞"; from the switch to the curve unit it's 6"; from one curve unit to another it's 31½" (2 layers); from curve unit to curve unit (using a loop) it's 47¼"; and from curve unit to curve unit it's 23⅝"; from curve unit to staircase entrance it's 9⅞"; from staircase exit to curve unit it's 37½"; from curve unit to the entrance it's 13⅞". Cut two rails for each track allowing a little extra according to the specific length. Attach them as indicated in the drawing, and adjust the length, if necessary, after assembling.

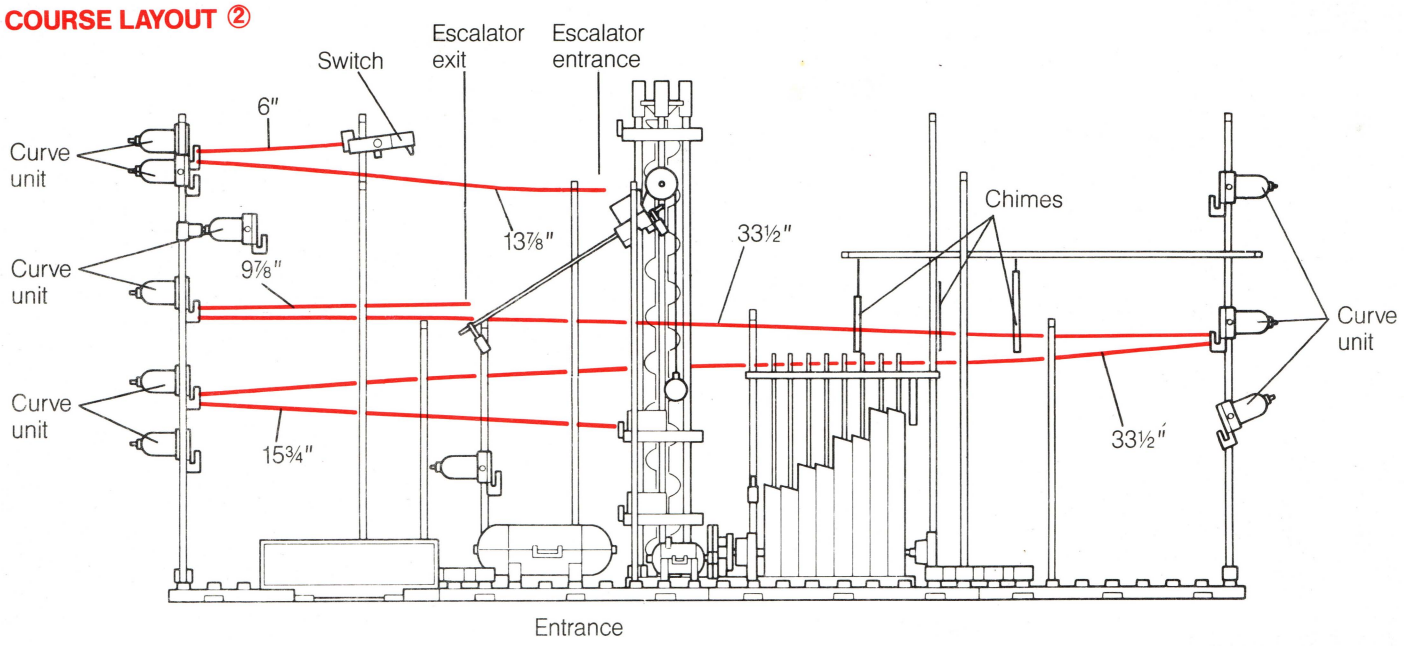
COURSE LAYOUT ②



TOP VIEW

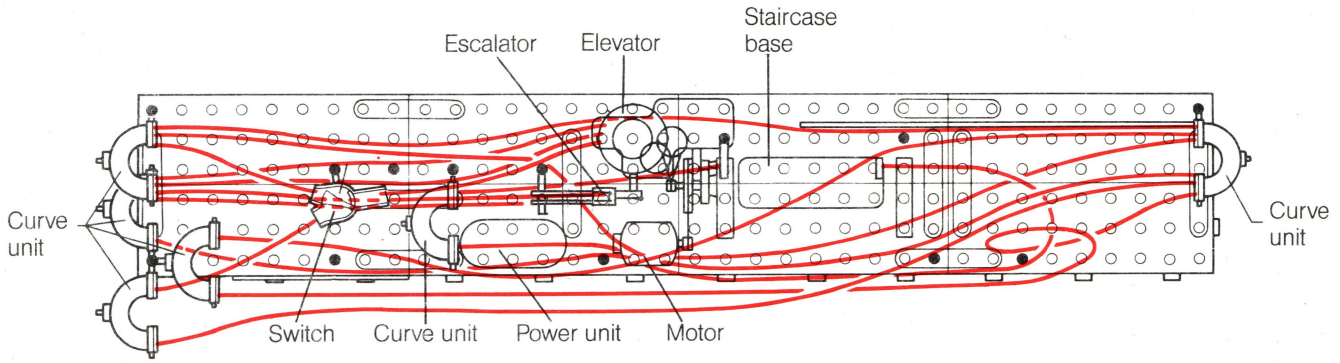
The distance from switch to curve unit is 6"; from curve unit to escalator entrance it's 13⅞"; from escalator exit to curve unit it's 9⅞"; from curve unit to curve unit it's 33½" (2 layers); from curve unit to entrance it's 15¾". Cut two rails for each track allowing a little extra according to the specific length. Attach them as indicated in the drawing.

COURSE LAYOUT ②



FRONT VIEW

The distance from switch to curve unit is 6"; from curve unit to escalator entrance it's 13⅞"; from escalator exit to curve unit it's 9⅞"; from curve unit to curve unit it's 33½" (2 layers); from curve unit to entrance it's 15¾". Cut two rails for each track allowing a little extra according to the specific length. Attach them as indicated in the drawing.



BASIC LAYOUT TOTAL VIEW

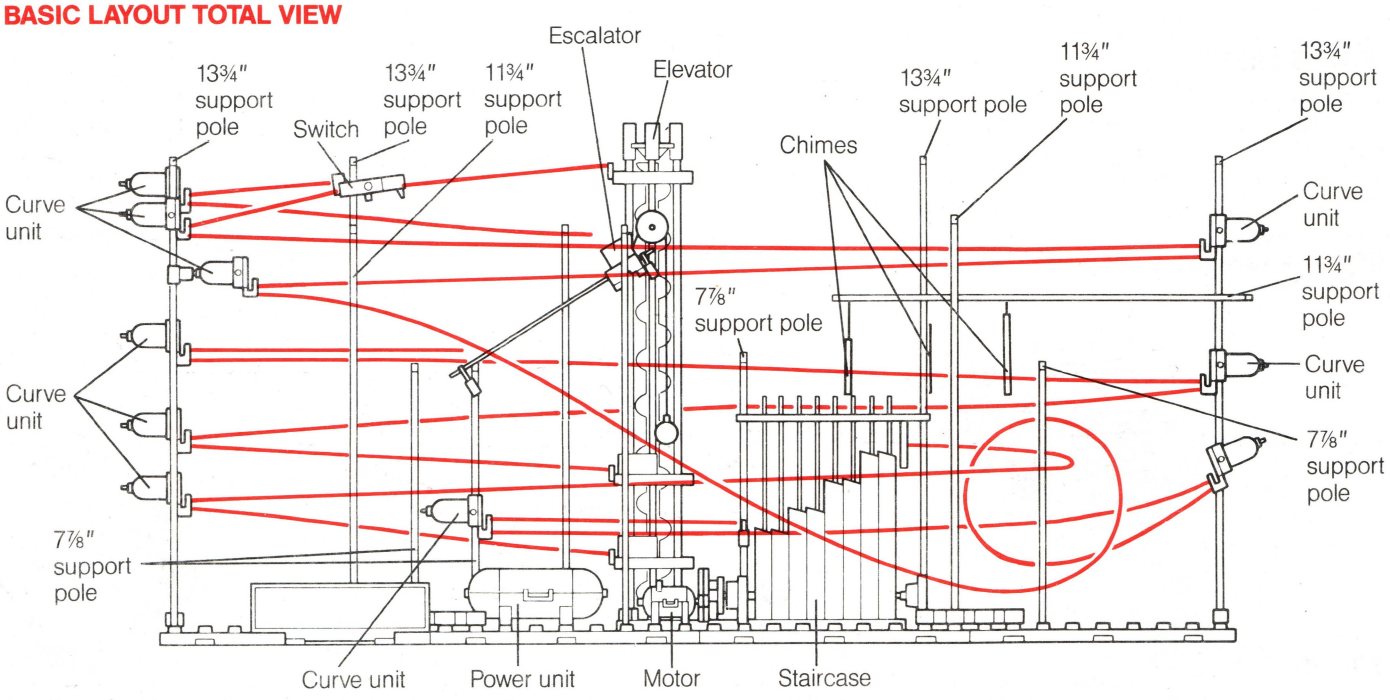
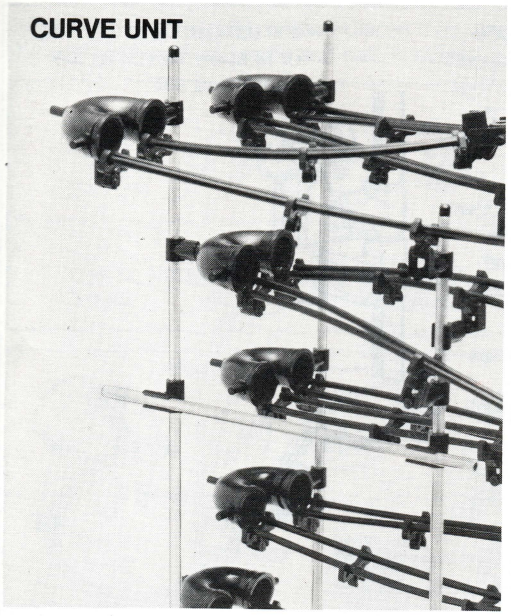
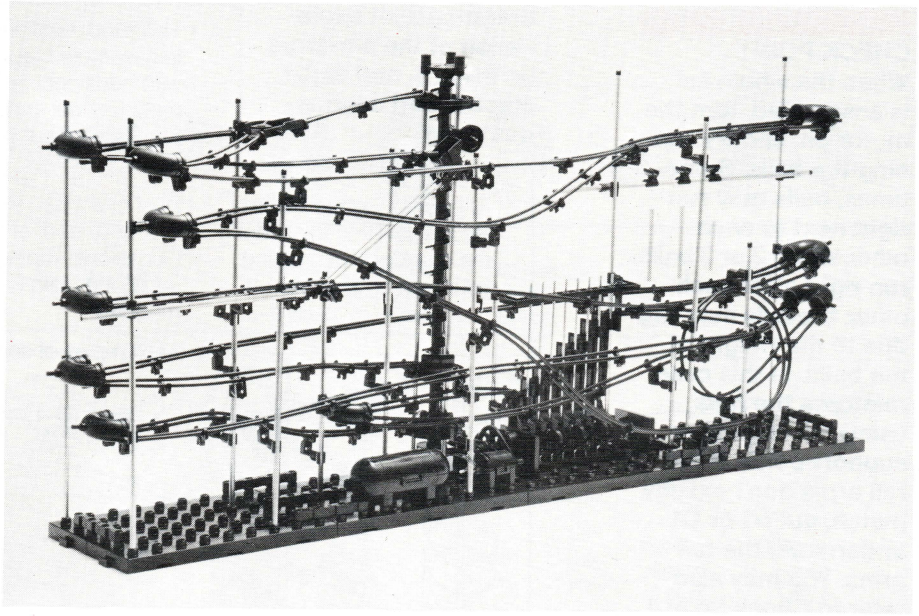
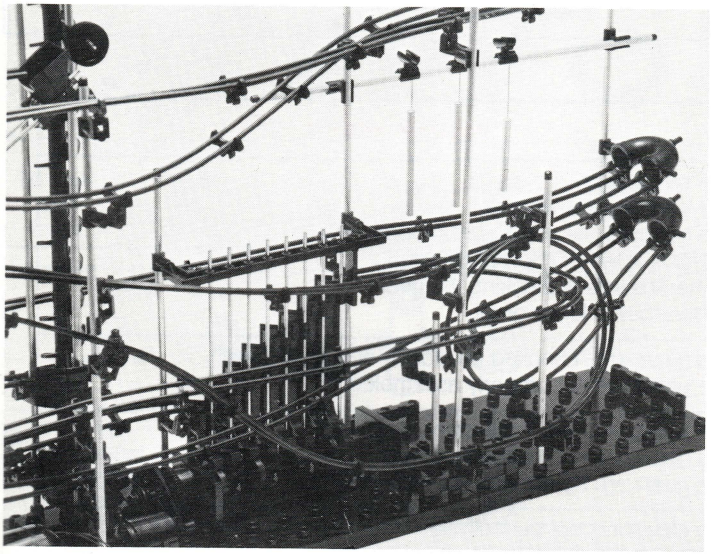
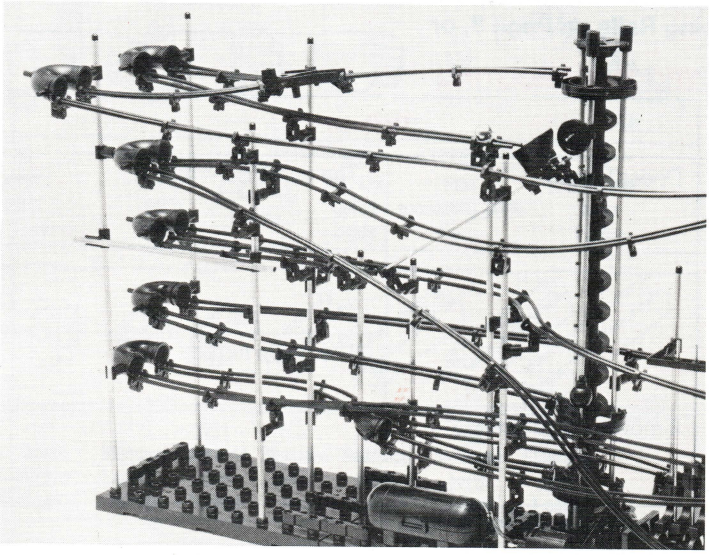


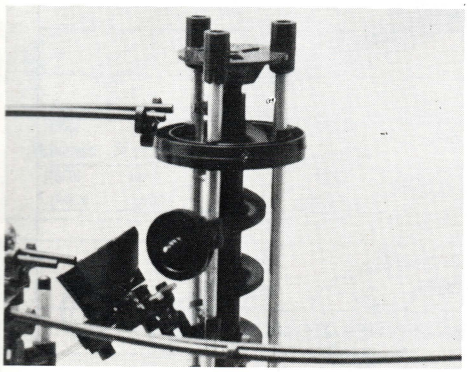
PHOTO OF ASSEMBLED BASIC LAYOUT

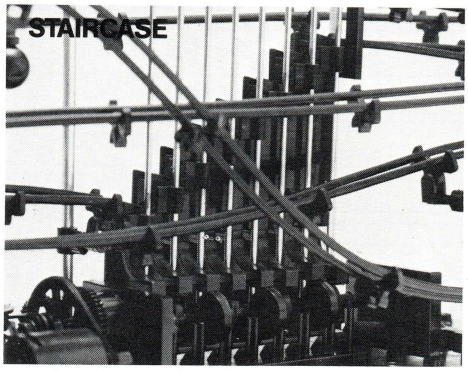


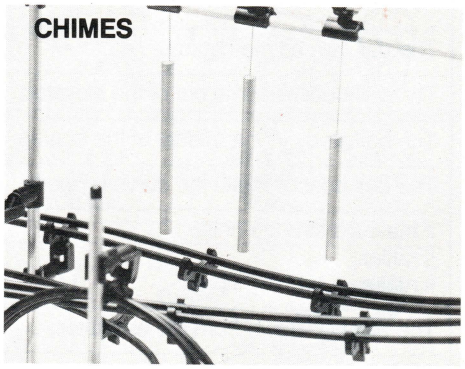


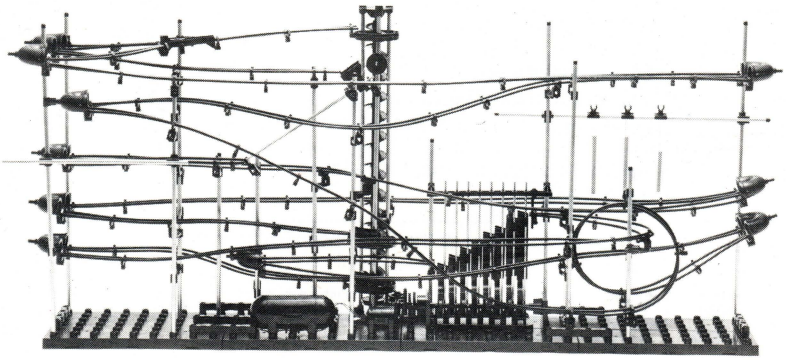


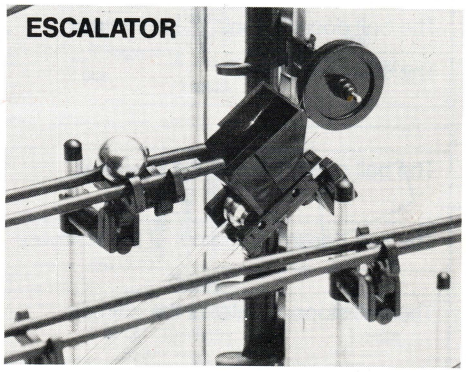








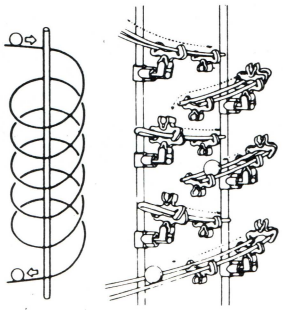




CHECK POINT
When the whole set is assembled, turn the motor on, and try running the balls. Sometimes, balls may run right next to each other. When 2 or 3 balls run right after each other, the rails may sag due to the weight of the balls. In this case, reinforce the rails using rail clamps or support poles. If the rail arms don't exactly match, put D1 or C1 underneath the rail arms. You may also refer to Check Point 1, Instructions for Attaching Rails on Page 8, or

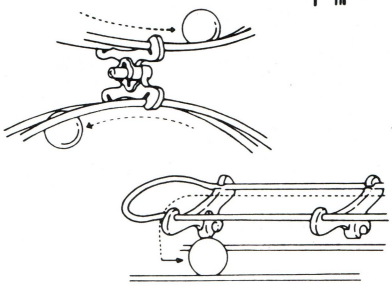
Entrance/Exit explanation of the elevators on Page 9, and enjoy smooth and continuous rides.

- After enjoying the basic layouts, feel free to accept the challenge of creating your own original layouts.

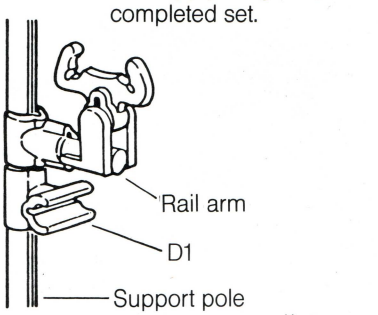


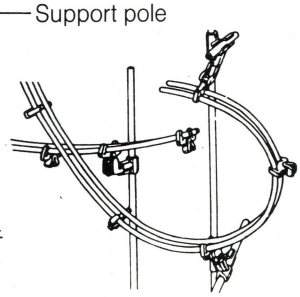
- This product allows you to assemble bigger layouts with additional parts. Your ingenuity will enable you to expand the layout to its fullest extent.
- Dust or lint can slow down the movement of balls. Occasional wiping with a silicone cloth is recommended.

Examples of schemes



- It is dangerous to lean on, or to apply weight to, the completed set.



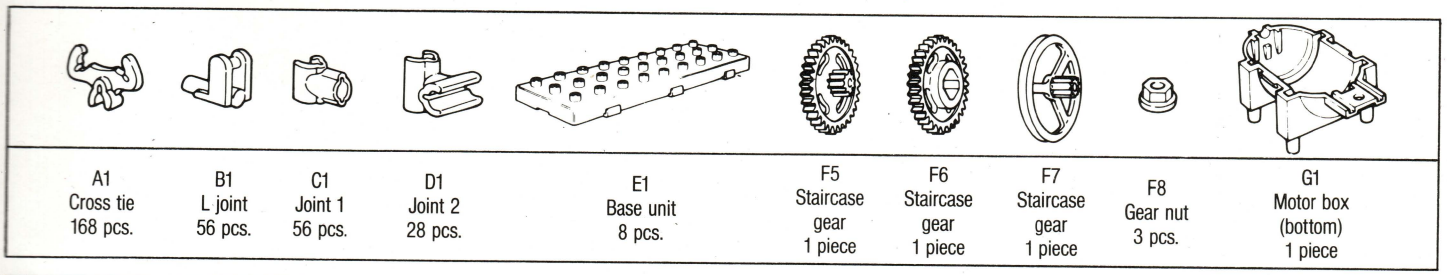


TROUBLE SHOOTING

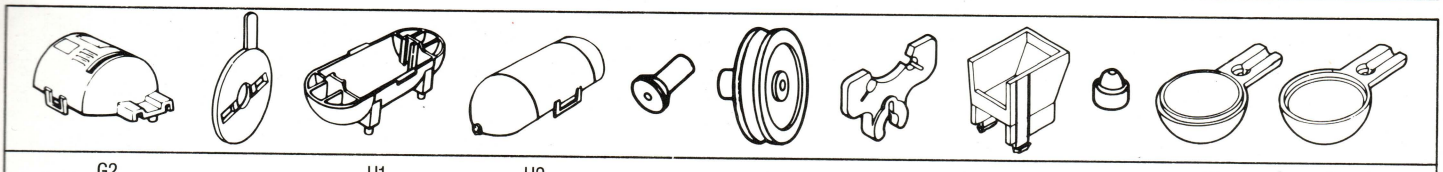
Problems		Possible reasons
Doesn't move.	The gears don't turn.	The switch is off. The batteries are worn out. The batteries are not placed properly. A wire is loose or improperly wired. Some obstacle is blocking the gears. Rubber belt is loose or off.
	The gears turn.	The gears aren't hooked up closely enough to mesh. The gears are not properly assembled.
It moves sporadically.		The wiring is loose, the battery is weak. The gears are not meshed properly. The gears are not assembled correctly.
The ball falls off the elevator. The ball doesn't climb up the elevator.		The elevator is not perfectly vertical, not aligned properly. The support pole of the elevator is tilted. A wire is loose, the battery is weak.
The ball falls off the course.		See P 8 and 9.
The ball doesn't come out of the elevator.		See P 9.
The ball stops in the middle of the course.		The drop is negative or too little.
The ball doesn't make the curve properly.		See P 9 "HOW TO MAKE A LOOP."
It makes a strange noise. It rattles. It makes a rubbing noise.		Loose assembly. The gears are not meshed properly. Something is stuck in the gears.
The ball falls down from the escalator.		Adjust the position of the basket on the escalator.
The escalator stops.		Incline the angle of the escalator.
The ball doesn't fit into the curve unit.		Align Part A1 properly with the hole.
The staircase stops.		Loose assembly. Too much friction between parts (use lubricating oil). Power slips due to oil on the rubber belt.
The ball doesn't fit into the staircase.		Adjust the position of the staircase entrance and the rail.
The ball doesn't come out of the staircase.		Adjust the position of the staircase exit and the rail.
The ball stops, or falls, at the chimes.		The space between the chimes and the rail is too narrow; move the chimes higher.

PARTS LIST

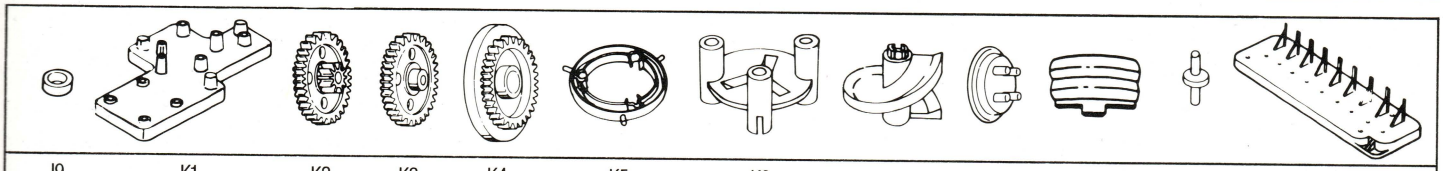
Some parts are available in more pieces than what you would need.
The color of the plastic parts and rails is black.



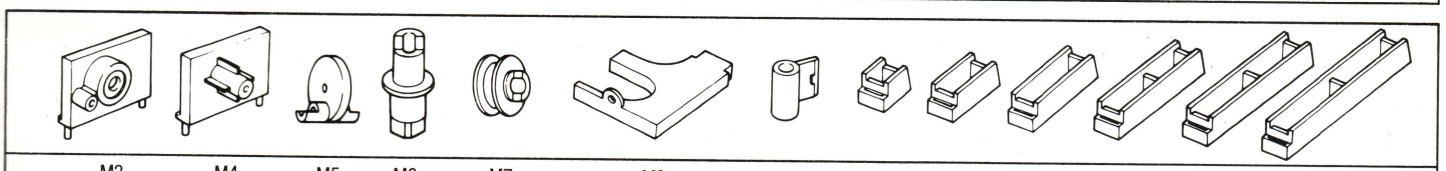
A1 Cross tie 168 pcs. | B1 L joint 56 pcs. | C1 Joint 1 56 pcs. | D1 Joint 2 28 pcs. | E1 Base unit 8 pcs. | F5 Staircase gear 1 piece | F6 Staircase gear 1 piece | F7 Staircase gear 1 piece | F8 Gear nut 3 pcs. | G1 Motor box (bottom) 1 piece



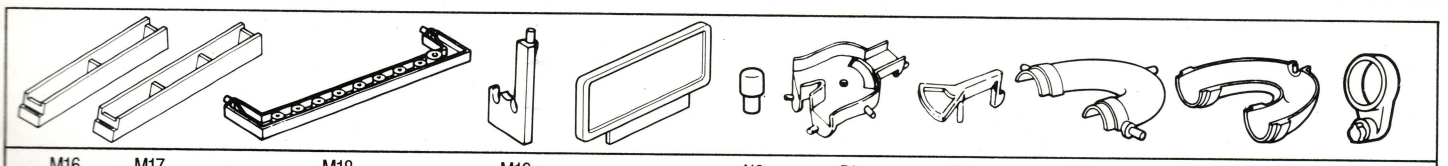
G2 Motor box (cover) 1 piece | G3 Switch board 1 piece | H1 Battery box (bottom) 1 piece | H2 Battery box (cover) 1 piece | J1 Pipe (short) 1 piece | J3 Pulley #3 1 piece | J4 Cross tie 2 pcs. | J5 Basket 1 piece | J6 Cap 1 piece | J7 Ball cover (upper) 1 piece | J8 Ball cover (lower) 1 piece



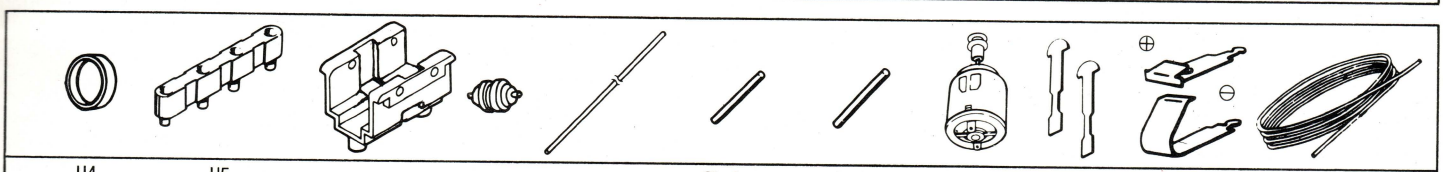
J9 Ball cover (ring) 1 piece | K1 Elevator base 1 piece | K2 Elevator gear 1 piece | K3 Elevator gear 1 piece | K4 Elevator gear 1 piece | K5 Elevator parts 3 pcs. | K6 Elevator parts 1 piece | K7 Elevator parts 14 pcs. | K12 Pulley #2 1 piece | K15 Elevator guard 2 pcs. | M1 Pipe connecting parts 4 pcs. | M2 Staircase base 1 piece



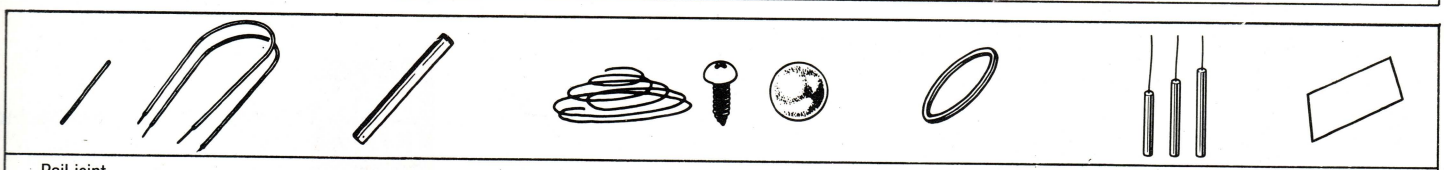
M3 Camshaft receiver 1 piece | M4 Camshaft receiver 1 piece | M5 Camshaft receiver 8 pcs. | M6 Gear receiver 1 piece | M7 Staircase pulley 1 piece | M8 Staircase parts 8 pcs. | M9 Shaft receiver 8 pcs. | M10 Staircase parts 1 piece | M11 Staircase parts 1 piece | M12 Staircase parts 1 piece | M13 Staircase parts 1 piece | M14 Staircase parts 1 piece | M15 Staircase parts 1 piece



M16 Staircase parts 1 piece | M17 Staircase parts 1 piece | M18 Staircase parts 1 piece | M19 Staircase parts 1 piece | N1 Nameplate 1 piece | N2 Support Pole Cap 20 pieces | P1 Switch unit 1 piece | P2 Switch part 1 piece | U1 Curve unit part A 10 pcs. | U2 Curve unit part B 10 pcs. | U3 Curve unit part C 20 pcs.



U4 Curve unit part D 20 pcs. | U5 Base connector 10 pcs. | Rail Car 1 piece | Wheel 2 pieces | Wire rail 7⅛" 3 pcs. 6½" 8 pcs. | Shaft 2/32" diam. 1" long 1 piece | Shaft 3/32" diam. ⅝" 1 pc. 1" 1 pc. ¾" 1 pc. | Motor 1 piece | Metal motor fittings 2 pcs. | Battery fittings for ⊕ and ⊖ 1 each | Rail 65½" long



Rail joint 1/32" Diam. 3/8" long 10 pcs. | Lead wire blue, red 7⅞" 1 pc. each | Support poles 13¾" 9 pcs. 11¾" 5 pcs. 7⅞" 4 pcs. 3⅞" 1 pc. | Thread 1 piece | Screws for base 8 pcs. | Balls 6 pcs. | Rubber belt large 1 pc. small 1 pc. | Chimes with thread large 1 pc. medium 1 pc. small 1 pc. | Lubricator 1 piece

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